

Water-Data Report 2011

06038000 HEBGEN LAKE NEAR WEST YELLOWSTONE, MT

Missouri Headwaters Basin
Madison Subbasin

LOCATION.--Lat 44°51'51", long 111°20'09" referenced to North American Datum of 1927, in SW ¼ NW ¼ sec.23, T.11 S., R.3 E., Gallatin County, MT, Hydrologic Unit 10020007, at Hebgen Dam on Madison River, 18 mi northwest of West Yellowstone, and at river mile 103.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--January 1936 to current year. Records prior to October 1939, published only in Water Supply Paper (WSP) 1309. Figures of contents published in WSP 1629, 1709, and 1729 have been found to be in error and should not be used. Prior to October 1, 1949, published as Hebgen Reservoir near West Yellowstone. Records of daily elevations are in files of the USGS Water Science Center located in Helena, Montana.

REVISED RECORDS.--WSP 1916: 1959-60.

COOPERATION.--Elevations and capacity table furnished by PPL EnergyPlus, LLC.

REMARKS.--Elevation of gage is at sea level (levels by The Montana Power Co.). Prior to earthquake of Aug. 17, 1959, elevation of gage was 9.74 ft higher, also at sea level. Reservoir is formed by earthfill dam with concrete core and spillway completed in 1915, repaired in 1960 following severe earthquake of Aug. 17, 1959, that lowered dam 9.74 ft and deformed reservoir area. Elevations are referenced to the National Geodetic Vertical Datum of 1929. Subsequent usable capacity is 377,500 acre-ft, between elevation 6,473.00 ft, bottom of outlet tower, and 6,534.87 ft, spillway crest. Dead storage is 7,340 acre-ft below elevation 6,473.00 ft. Prior to Aug. 17, 1959, usable capacity, 344,700 acre-ft between 6,483.11 ft, bottom of outlet tower, and 6,544.61 ft, spillway crest. Observations of reservoir level prior and subsequent to earthquake indicate smaller increases in capacity than indicated by new capacity table. Figures given herein represent usable contents. Water is used for recreation and downstream power generation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 380,500 acre-ft, July 21, 1987, elevation, 6,535.0 ft; minimum monthend, 670 acre-ft, December 31, 1936, by capacity table used prior to August 1959.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 378,300 acre-ft, Aug. 28, elevation, 6,534.87 ft; minimum observed, 258,100 acre-ft, May 4, elevation, 6,524.50 ft.

**MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS,
SEPTEMBER 2010 TO SEPTEMBER 2011**

Date	Elevation (feet)	Contents (acre-feet)	Change in Contents (acre-feet)
September 30	6,531.51	336,200	--
October 31	6,531.39	334,800	-1,400
November 30	6,530.54	324,900	-9,900
December 31	6,529.71	315,100	-9,800
Calendar Year 2010	--	--	-11,700
January 31	6,528.53	301,800	-13,300
February 28	6,527.55	291,000	-10,800
March 31	6,526.25	276,800	-14,200
April 30	6,524.66	259,800	-17,000
May 31	6,528.10	297,000	+37,200
June 30	6,533.57	362,000	+65,000
July 31	6,534.54	374,600	+12,600
August 31	6,534.79	377,800	+3,200
September 30	6,534.05	368,200	-9,600
Water Year 2011	--	--	+32,000